fees and bear the portion that Mr. Citizen is unable to bear?

No. The nurse is getting none too much for her work if she is to live decently and save something.

Two plans suggest themselves to me:

1. Some plan should be evolved whereby hourly nursing service can be made available. Most patients need less attention than we have taught our nurses to give. There is too much temperature taking, bathing, rubbing, charting and general fussing about a patient. How often do we hear a patient say "oh, just let me alone."

If a nurse could come in once a day, give a bath, change the bed, give an enema, or make the personal toilet, the need would be well met. The balance of necessary attention could be given by the unskilled people in the home.

The Victorian Order of Canada solves that problem splendidly, and is a tremendous success. If the Red Cross or a new organization could be made to stand sponsor for such a plan it would meet a real need. I am not now speaking for the very poor, they are already furnished a great deal of such service in many communities. I am advocating an organization in each community which shall have the backing of a strong committee. This organization would hire the nurses needed, pay them a good salary, these to be available for service to the average self-respecting citizens of moderate income. It would be a big step toward solving the problem.

2. There should be a systematic effort made to instruct at least one person in every home as to the simpler essentials of the care of the sick.

What a comfort it is to go into a home and have some woman hand you a little piece of paper with some temperature records thereon and to see the patient's person, bed and sick-room neat and tidy.

This society should back the Red Cross or other organizations in their home-nursing programs, and if necessary the county society and local nurses should give short courses in a few essentials. The slogan should be "at least one person in every home who can take a temperature, give a bath or enema, make a bed and prepare a simple invalid's meal."

The most important point I want to urge is that there must be harmony and co-operation between all the elements to this problem. No law should be placed upon the statute books, no rule adopted which materially changes the status of any party to the problem until all have an opportunity to be heard.

A PLEA FOR BETTER FRACTURE RESULTS.*

By GEO. J. McCHESNEY, M. D., San Francisco.

In no branch of surgery have we learned more from our war experience than in the treatment of fractures, and now is the time to apply that dearly-bought knowledge before it becomes a dim memory.

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

The war fractures—practically all open and a large percentage comminuted—were hence of the most difficult type, and quite the reverse of the civil variety. So, speaking from experience, after handling the war type of fracture, the civil seems almost ridiculously easy when the same principles are applied, and the treatment of fresh fractures thus becomes a real pleasure and not a flurried attempt to obtain some sort of union, dismiss the patient, and avoid a lawsuit.

What in brief are the principles emphasized by the war treatment of fresh fractures:

(1) That the traction method of treating fractures, now nearly perfected, should be used much oftener.

(2) That meticulous or geometric accuracy of approximation is not necessary for good function.

(3) That metallic fixation or internal splinting is never absolutely necessary.

(4) That as a consequence, operations are needed much less than is the practice at present.

In discussing these points in detail, the first and greatest lesson concerning the renaissance of the traction method, is the recognition of the importance and value of the Thomas traction splint and its various modifications and accessories. Being simple in design and operation, it is both easy to make and to apply. By taking its counter-pressure against the tuberosity of the ischium or against the shoulder, it does not fasten the patient to one spot in the bed, as does the weight and pulley form of traction. On the contrary, the patient can be quite comfortably transported from bed to wheelchair or from place to place if needed. The use of the bedpan is made easier, and the patient can be put into the sitting position to avoid pneumonia.

Second. By allowing the injured limb to be always open to inspection and massage, it does away with the principal drawback of plaster of Paris, which may easily hide a beginning sepsis as well as an angulation at site of fracture.

Third. By changing the tension in the supporting slings thus raising or lowering the fragments, antero posterior defects in alignment can be corrected, and by the use of screw-pressure pads, clamped to the side bars, lateral deviations can be corrected. Thus we have a direct pull to overcome the shortening tendency from muscle-spasm, and also means of making correction thrusts at right angles, in any direction, on either fragment, surely an ideal arrangement.

Fourth. Dressings can be done much more easily, especially if large ones, and the spread of infection watched and guarded against better than with plaster splints.

Another great advance is in the early mobilization of neighboring joints, especially the knee and elbow joints. Not only can they be inspected and massaged daily but flexion bars can be attached to the sides of the Thomas splint and slight motions at the joint made daily, while the fracture is still efficiently splinted. This does away completely with the stiff knees especially, that have retarded for six months or a year the complete convalescence of fractured femurs. The same

thing can be done in the elbow if the fracture in the humerus is above the lower third. In addition, the use of the Thomas splint here necessitates an abducted position of the shoulder joint, which is now recognized to be the one of choice wherever possible.

Below the knee joint the use of the Sinclair foot piece admirably controls the position of the lower fragment while providing for traction which is sufficient for almost any fresh fracture in the tibia and fibula, especially if the celluloid and acetone glue is used.

Col. Blake at Paris suspended all his fractures in Thomas or Hodgen splints. In many instances this is desirable, but it adds much to the complexity of the treatment, and often can be dispensed with.

The second fact of importance—that good ultimate function does not depend upon extreme accuracy of approximation—is one we are too prone to overlook in these days of X-rays, lawsuits, etc. We long have known, and should teach the laity, that when the X-ray shows a lateral displacement of a third or even a half of the thickness of the bone, that a good result will be obtained if the general alignment is good. We are altogether too prone to use the radiogram as a clincher to an argument for the necessity of open operation, either plating or wiring or what not, in an endeavor to correct these unimportant lateral maladjustments. War surgery has shown overwhelmingly that good results are uniformly attained in this class of case by a let-alone policy as far as operating is concerned.

In my work as orthopedist on the Diagnostic Section of the St. Luke's Hospital Clinical Club, I incidentally see a certain number of old fractures, and the absence of symptoms in fractures often almost approaching malunion shows strikingly Nature's power of adjustment to meet these conditions.

It is time we were more fair to our patients in this regard, and we will then find our statistics will improve.

In line with this argument is the third point—regarding the advisability of metallic fixation by plates, wires, bands, nails, etc.

In a thirteen months' experience in a British hospital over six hundred fractures passed through my hands. In only one had metal been used, where the Lane plate had caused a delayed union in a femur. I can assure you no others were put in by us.

To use the Lane plates is a great temptation. We operate, get our fragments in perfect, or nearly perfect line, apply our plate, getting immediately a gratifying stability where there had been a distressing excess of motion, close our wound, apply some sort of splint, perhaps radiograph our operation area and find a most perfect position; the patient's mind is relieved and everyone is happy. But our troubles have only just begun. We all know the dreary sequence. After some days, weeks or months we may notice a low-grade inflammation or even slight discharge from the incision, persisting till the plate is removed, and then a delayed union follows. Or there occurs some rarefaction around screws, loosening of same, slip in alignment and delayed union. Or the plate may really be of service; the union may not be much delayed, but the callus remains tender and the plate has to come out. Sometimes it stays in for years, but we all know that the great majority come out sooner or later, and this is not good fracture surgery.

But the matter of a secondary operation to remove the plate is not as important, to my mind, as is the delay in union which the plate often causes. This is the greater evil by far, and here our war experience should enable us to make a great advance.

I contend that with the improved methods of traction perfected by our war experience, the use of metallic fixation is no longer necessary with one exception only; i. e., in fractures of both bones of the forearm. Here sincere effort by traction may fail, as we cannot make the lateral corrective thrusts needed, and rather accurate alignment is important. Consequently, open reduction and plating may be necessary with full realization of probable delayed union and secondary operation for plate removal.

But in no other fracture can I conceive metal to be indicated. Femurs tolerate it the best; tibiae the worst, but in no place except as above should we find its use really necessary.

The same applies to the use of grafts in fresh fractures, for we are considering fresh fractures only. Although mechanically efficient, and without the objection of being a foreign body, still the use of a graft means a long incision, much cutting of soft parts, especially periosteum, and a weakening elsewhere of the bone affected or of some other bone. The last objection is overcome by the use of prepared ivory or beef bone splints. But useful as these devices are in ununited fractures, in the fresh ones they should have a very small place.

The objection can be advanced that lawyers and juries view X-ray plates and base their opinions and verdicts on just such accurate appositions or lack of them. But since when is our profession to take its ideas concerning fractures from the laity, even though it be composed of eminent lawyers? It is we who should decide these questions for them, as we can do immediately, once the profession agrees on the subject.

By the very multiplicity of metallic devices and variations of bone plates we are made aware that they are not giving the desired satisfaction. Better far, a return to the older and simpler traction methods, revised, perfected and brought up to date by the vast experience of the late war.

It seems to me that the application of the Golden Rule puts the whole thing in a nutshell. Would you be content, for yourself or for members of your family, with a fairly accurate apposition in good alignment and little or no shortening, such as can always be obtained by properly applied Thomas splinting with lateral pressure pads, for the first three or four weeks, followed perhaps by plaster of Paris; or would you prefer

an absolutely accurate reposition such as an operation only will give, with Lane plating or other metal devices to hold it, followed almost certainly by a secondary operation for its removal and a fair chance of a delay in union? The latter is due principally to the stripping of the periosteum off the ends of the fragments just where it is most needed, and happens whether the fragments are plated, wired, banded, held with inlay graft, or merely placed in position through an incision. So what would you have done for your own family or yourself, and what should you do for your patient?

I argue for more simplicity of method in treatment of fractures, and, in spite of the apparently bewildering complexity of devices for traction, in and out of Thomas splints, Balkan frames, pulleys, weights, etc., still it is far simpler in its effect on the tissues than the most skillfully devised and executed operation.

In conclusion, I can do no better than quote to you from the address made by Sir Robert Jones at the last Convocation of the American College of Surgeons, on the subject of lessons learned in the great war:

"The lessons that we civilian surgeons should learn from all this are clear. If such results are obtained by simple means in such compound fractures as have occurred in war, why should we have recourse to more complicated methods? Why should the student be taught that fractures of the femur can only be adequately dealt with by plates and screws or other internal splinting? Why should we spend so much ingenuity and time in devising operative novelties, when it is so much easier and more useful to learn the simple way? In the hands of the expert and cleanly surgeon catastrophes may generally be avoided, but what of the rest? In every village and hamlet the humblest of us may be called to treat a broken thigh, and the humblest of us should know before he leaves his studies how this can be done with safety and success."

Discussion opened by Dr. Jas. T. Watkins, San Francisco. Discussed by Drs. Carl Hoag, San Francisco, S. H. Buteau, Oakland, G. M. Barrett, San Francisco, G. H. Galbraith, Long Beach, M. C. Harding, San Diego, T. A. Stoddard, San Francisco, C. P. Thomas, Los Angeles, O. O: Witherbee, Los Angeles, and A. W. Morton, San Francisco.

PRACTICAL POINTS IN USING THOMAS SPLINTS.*

By STERLING BUNNELL, M. D., San Francisco.

The Thomas splint well merits the permanent popularity which it has gained. By its use most fracture of long bones can be better treated than by the open operation method and the dangers from the latter can be avoided. The old rule of immobilizing the joint above and the joint below the fracture resulted in loss of function of these joints and a long period of disability in regaining this loss of function. With the Thomas splint the joint above and the joint below are kept mobilized, so that function of them is not lost. Its economy, traction principle, ease of application and adaptability to open fractures make it far more serviceable than the plaster of Paris cast. For transportation it is unexcelled, and all first-aid stations should keep Thomas splints on hand. The successful use of the Thomas splint necessitates attention to many details, some of which are enumerated in this paper.

Frequent inspections should be made, with especial attention to angulation, rotation and lateral deviation of the fractured ends of the bone; also to the position of the foot to avoid equinus and pronation, to the possibility of any pressure points, to any possible pressure on the external popliteal nerve, which would result in footdrop and to other points as enumerated below.

Frequent inspections by X-ray are necessary and should be done at least weekly, after the correct position has been attained. The use of wire mesh is superior to that of muslin slings, as the latter cause uneven pressure along the under surface of the limb, which is very marked when the limb is edematous; pads should cover the mesh. The ring of the Thomas should be too large rather than too small. When the thigh is flexed, in order to avoid a pressure sore over the anterior superior spine, a cord can be made to run from the top of the ring to the Balkan frame over the foot of the bed, so that the patient can pull himself away from the pressure of the top of the ring. Pressure on the malleoli by the traction straps can be avoided by using a spreader, or by looping each traction strap around the rod of the splint.

Position of the foot is too often overlooked and equinus and pronation are allowed to exist. A pad wedged against the inner malleolus and another wedged against the foot below the outer malleolus will correct pronation. The equinus may be corrected by the use of the wicket, or an adhesive strap on the sole of the foot, prolonged up by a cord over a pulley and slung by a one or two pound weight. The angle of this strap on the sole of the foot controls rotation. The use of the Sinclair foot piece gives a perfect control of the foot in every direction; one can easily be improvised. In applying it, it is very important, however, to rely for traction on the straps of the posterior half of the foot only. These straps can often run above the malleoli and they pull in the correct line of the leg.

To apply traction to the skin some glue is necessary and is superior to adhesive plaster or moleskin. The latter of the following is probably the best.

Sinclair's glue:	Glue	50
	Water	50
	Glycerine	2
	Thymol	1
	Calcium chloride	1

(Use hot. Remove with hot wet towels.)

Heussner's glue:	Resin	50
	Alcohol	50
	Turpentine	1
	Benzine	1

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.